which did not have the second feeding by the mouth, promptly died in anaphylactic shock. Richet also found that when krepitin is given by the mouth the sensitized animals showed a marked leukocytosis at the second feeding. If the animal survived the anaphylactic shock the late symptoms of poisoning due to the krepitins did not appear, therefore they were rendered immune.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF
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The Influence of Local Anemia upon the Action of Poisons and upon Infective Processes.—R. Bestelmeyer (*Br. Beitr.*, 1912, Band lxxviii, Heft 2, S. 333) notes, as a result of his experiments, some interesting facts. Although there is no actual killing of virulent baccili by reason of a locally produced anemia, yet the resorption of injected soluble poisons is so retarded that ordinarily fatal doses may be injected without producing a fatal effect. This was proved by the use of various snake poisons. With the slowing of the capillary current there is a corresponding lowering of the rate of absorption; with a quickened capillary current more poison is absorbed. In infective states, local anemia delays the entrance to the blood stream of bacteria and their toxins. The general and local manifestations appear later, but there is a greater tendency to localized necrosis, although secondary abscesses by way of the lymphatics are less prone to occur. Passive hyperemia, Bestelmeyer points out, is anemia, as far as the arterial blood is concerned.

Vaccination with Sensitized Agents.—Besredka (*Bull. d. l'Inst. Pasteur*, June 30, tome x, No. 12) deals anew with the question of vaccination by means of agents, living or dead, that have been attenuated in various ways. In the case of tubercle bacilli, if attenuated, sensitized bacilli are used, they are not only themselves absorbed more quickly than ordinary bacilli, but they in some way hasten the absorption of bacilli injected subsequently to their own entry into the body. The sensitized bacilli (if one may so translate *sensibilisés*) are better borne by the animal than are the non-sensitized, to the extent that with the former, repeated injections do not kill; as to the power as a vaccine, guinea-pigs treated with sensitized bacteria contracted disease from subsequent inoculation with ordinary virus, but after long delay and of light grade of severity. Meyer used the sensitized vaccine on 47 persons; localized tuberculosis, such as abscess or fistula, healed rapidly, while bone and joint lesions were quickly bettered; 40 out of 47 cases showed definite amelioration. Vallée and Guinardre report equally good results in 30 women; all these observers unite in declaring the innocuousness of the sensitized bacteria. With reference to sensitized pneumococci as a vaccine, Leon and Aoki have had good results in experimental animals; the innocuity is quickly obtained and is more durable than in the case of ordinary pneumococci. A negative phase is not obtained after injection, and the immunity to subsequent inoculation was sometimes very striking. Vaccination against typhoid fever is of interest in view of the fact that Besredka (with Metchnikoff) has used the living sensitized typhoid bacilli for the purpose. Encouraged by the results obtained in chimpanzees, they have carried on the experiments in man. Alcock has proved in the case of 44 persons that the procedure is a harmless one; the sensitized vaccine leads to little or no general or local reaction, and Besredka states that 700 human subjects of recent experiments bear witness to its harmlessness. He cites the work of Garbat and Meyer, as to the effect on the serum of the inoculated animals. The immunity of these animals surpassed that of the animals immunized in the old way, nevertheless, neither agglutination nor fixation of the alexin could be cited as indications of this immunity.

Some Facts about the Epidemiology of Tuberculosis.—A. CALMETTE (*Ann. de l'Inst. Pasteur,* July, 1912, vol. xxvi) has brought forward considerable evidence upon the existence of tuberculosis in the French colonies. In the tropics, tuberculosis goes hand in hand with civilization. Black races, where they are uncontaminated from without, remain very free from the disease. None, however, of the races studied were immune, and the last comers to civilization were less immune than those who had mixed somewhat with the outside world. "It is no longer possible," says Calmette, "to support the hypothesis formulated by von Behring in 1903 that pulmonary tuberculosis in the adult is only a late manifestation of an infection of bovine origin, contracted in the earliest months of life as a result of the ingestion of milk from a bacilli-carrying cow." Among the indigenous population of West Africa and Indo-China, infants are found free of infection up to the time of weaning, after which they are subject to familial and other infections, especially by the custom prevailing in Indo-China, by which some older person chews the rice before putting it into the child's mouth. Later, the pipe, the betel, or the kola nut is freely transferred from mouth to mouth. In West Africa, Indo-China, the Antilles, and in Oceania, "interhuman" contamination alone is at work, since children drink no cow's milk, and indigenous cattle are as yet uninfected. In older colonies, the conditions approximate to the state of affairs seen in Europe, and tuberculous milk must be admitted to be in some degree responsible.

The Process of Vital Staining.—W. SCHULEMANN (*Zeitsch. f. exper. Path. u. Ther.,* 1912, Band xi, Heft. 2) makes certain observations upon the relationship between the chemical constitution of cells and their stainability during life. He considers that the granules in the cells that exhibit the stain are formed as a result of the entry of the coloring material to the cell, and that there occurs a chemical combination between the coloring matter and a (hypothetical) reaction-body which is formed for the purpose. This view is supported by the fact that in intensifying experiments where the color is re-administered, the